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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Technical Support Document For Federal Implementation Plan (FIP) Pesticide Measure - 40 CFR 52.2960

February 10, 1995

SUMMARY OF PROPOSAL: EPA proposed to reduce Volatile Organic Compound (VOC) emissions from agricultural and structural pesticide application in California by: (1) requiring pesticide manufacturers to analyze the VOC-content of their products; (2) using that data to establish a VOC limit for pesticides; and (3) restricting distribution, storage, and use in California of pesticides with VOC contents above the limit. The proposal is described in 52 FR 23320 (May 5, 1994) and the technical basis can be found in the "Technical Support Document for Proposed FIP Pesticide Measure" (EPA, February 7, 1994, Document No. III-B-8 in EPA Air Docket No. A-94-09).

CHANGES TO PROPOSAL: 40 CFR 52.2960 is being promulgated generally as proposed. Significant modifications reflected in the final rule are listed below.

1. Paragraph (g) was added to allow use of VOC-content analysis collected under DPR's 1994-95 data call-in for purposes of setting the VOC limit in paragraph (c)(2). Other paragraphs addressing test methods have been modified appropriately.

2. Paragraph (c)(5) was added to exempt pheromones and emergency situations from the distribution, storage and use restrictions in paragraph (c)(3).

3. A 52% threshold value was promulgated in paragraph (c)(2)(v) in order to reduce emissions by 30% from a 1990 baseline. 30% is within the range of 20-45% included in the FIP proposal. See discussion under "SELECTION OF VOC REDUCTIONS," below.

4. Certain wood preservative coatings were exempted from the definition of structural pesticides in paragraph (b).

5. The record retention requirement in paragraph (e) was reduced from five years to three, largely to comply with the Office of Management and Budget's general information collection request guidelines.

6. Several references to "effective date" were removed for consistency with other FIP measures.

7. The implementation date in paragraph (c)(1)(i) was changed to May 15, 1997.

SELECTION OF VOC REDUCTIONS: To establish the threshold value included in paragraph (c)(2)(v) of the promulgated FIP measure, EPA relied on the statistical analysis of pesticide use databases described in the technical support document to the FIP proposal. Specifically, EPA took the weighted average of the maximum allowable VOC fractions needed to reduce emissions by 30% for the five data sets supplied by the Department of Pesticide Regulation as follows:

Data Set	0.30 VOC fraction	Pesticides affected	Weight factor
SacA	.39	.62	.17
SacN	.57	.39	.24
SCA	.50	.52	.13
SCN	.50	.43	.34
VenN	.37	.56	.11
Weighted avg	.48	.47	

Thus, in order to reduce emissions by 30%, the threshold value becomes 52% (inverse of 0.48), and a projected 47% of pesticide products will be affected.

EMISSION REDUCTIONS: Changes #1 and #6 above should have no impact on emission reductions. Changes #2, #4 and #5 are very limited and should not significantly affect reductions. Change #7 will delay emission reductions, but should not affect emission reductions in the attainment years.

Change #3 will affect the emission reduction calculations in setting the reduction target at 30% off of the 1990 emissions baseline. For consistency with State and local efforts, EPA relied on the 1994 SIP submittal to establish the 1990 baseline for VOC emissions from pesticides. EPA then calculated a target attainment year inventory by subtracting 30% from the 1990 baseline. This target level was subtracted from the uncontrolled attainment year inventory projections from the SIP to determine the attainment year reductions projected from the FIP measure. Finally, for purposes of the FIP attainment demonstrations, these reductions were discounted by 20% to account for rule-effectiveness.

Numbers in tons/summer day	Sacramento	Ventura	South Coast
1990 baseyear	9.6	12.8	6.8
30% of 1990 baseyear	2.9	3.8	2.0
Target emission level	6.7	9.0	4.8
Attain year baseline	9.8	12.9	7.1
Attain year reductions	3.2	3.9	2.3
Reductions * 80% rule effective	2.6	3.1	1.8

Costs: The technical support document to the FIP proposal calculated costs to industry associated with the proposed pesticide measure. This calculation is modified below to reflect the assumptions, discussed above, that 47% of pesticide products will be needed to achieve the 30% target emission reductions:

1. VOC content analysis
   Unchanged = $6,000,000.

2. Studies to support reformulation
   9,500 products x 47% x $110,000/product = $491,000,000.

3. Registration fees
   9,500 x 47% x $150,000/product = $670,000,000.

4. Total annualized cost
   $6MM + $491MM + $670MM = $1,167MM
   $1,167MM * 0.11 annualization / 365 = $351,000/day.

5. Cost benefit
   $351,000/day / (157 t/d * 30%) = $7,450/ton VOC reduced.

RESPONSE TO COMMENTS: EPA received many public comments on the proposed measure. Commenters include California Cotton Ginners and Growers Association, California Farm Bureau Federation, Western Growers Association, Agricultural Council of California, California Rice Industry Association, California Cattlemen's Association, Los Angeles Area Chamber of Commerce, Nesei Farmers League, Ventura County Economic Development Association, Ventura County Farm Bureau, Coalition for Labor, Agriculture and Business, Western Agricultural Chemicals Association, Citizen's Advisory Group of

Industries, California Grain & Feed Association, Pacific Egg & Poultry Association, California Warehouse Association, Ventura County Agricultural Association, California Department of Food and Agriculture, Southern California Association of Governments, California Environmental Protection Agency, Ventura County Air Pollution Control District, Sacramento area air pollution control districts, Natural Resources Defense Council, Ventura Environmental Coalition, Sherwin-Williams Company, Leavens Ranches, Oxnard Pest Control, H&H Oil Tools, Gold Coast Packing Company, Air Quality Consulting Services, Limoneira Company, and other associations, organizations, agencies, companies, and public and private citizens.

Significant comments and responses are grouped and discussed below.

TECHNICAL BASIS -- Base Year Pesticide Use Inventory

1. Regulation of pesticides should be based on pesticide use reports as compiled by the California Department of Pesticide Regulation (DPR).

   The FIP incorporates estimates of pesticide use both to establish baseyear emissions inventories for the attainment demonstration, and to establish a pesticide VOC content limit in §52.2960(c)(2). EPA relied on DPR's pesticide use report (PUR) system for both purposes in the FIP proposal. The Sacramento and South Coast area SIPs submitted by California in November 1994, however, rely on pesticide use estimates compiled by the California Air Resources Board (CARB). For consistency with the SIP, EPA has also used this information for the attainment demonstration component of the FIPs.

2. The inventory should rely on 1991 pesticide use reports rather than 1990.
3. The inventory should be based on the 1991, 1992, and 1993 pesticide use reports.

   Pursuant to paragraph (c)(2)(i), the VOC content limit, "...will be based on data from the 1990 pesticide use report...unless EPA determines that another year or years of PUR data or other information provides a more appropriate basis for the inventory." In the 1994 SIP, California stated its intention to use an average of the 1990 and 1991 PUR databases. EPA expects to rely on DPR's expertise in selecting the most appropriate database(s) for establishing the VOC content limit.

TECHNICAL BASIS -- Base Year Emissions Inventory

4. The inaccuracies in the current pesticide inventory must be resolved before developing a fair and effective emission control strategy.

   The first stage of §52.2960 requires pesticide manufacturers to analyze the VOC content of their products. Actual restrictions on pesticide use, storage, and

distribution will not be established until this data is carefully evaluated as described in §52.2960(c)(2).

5. The FIP incorrectly assumes that a 40-70% VOC reduction can be accurately calculated from existing data.

   The FIP proposal targeted 20-45% reduction in VOC emissions from pesticides, not 40-70%. From that range, EPA has selected a 30% target for the promulgated FIP measure. As with all source categories, various assumptions must be made to estimate emissions and emission reductions from pesticide use. EPA has attempted to make reasonable assumptions and to use the best information available in developing control strategies and estimating associated emissions.

6. The emissions inventory should not assume that all pesticides are 100% volatile.

   The inventory estimates for both the proposed and final FIP actions incorporate emission factors to account for the non-volatile component of pesticide use. In addition, the analytic analysis required in paragraph (c)(1) will provide more accurate quantification of the volatility of specific pesticides.

7. Pesticide emissions should be based on DPR's 1994-95 data call-in, and not on faulty assumptions.

   Paragraph (g) and associated references have been added to the final FIP rule to allow use of DPR's call-in data in establishing the VOC content limit.

8. Emissions data should be based on actual emissions and not the potential to emit as measured in the laboratory.

   Actual field emissions of VOCs from pesticides will vary based on application procedure, substrate, wind, humidity, temperature, and other parameters. The laboratory procedures described in paragraph (f) are designed to provide the most accurate information possible without placing an undo analytic burden on the pesticide use or manufacturing industries.

9. Pesticide emissions account for less than 0.06% of the total VOC emissions inventory for the San Joaquin Valley.

   According to CARB's November 1994 SIP submittal, total anthropogenic VOC emissions in the San Joaquin Valley were 472 tons/day in 1990. As summarized in appendix 6 of the TSD to the FIP proposal, pesticide use in San Joaquin resulted in 64 tons/day of VOC emissions in 1990, or 14% of the Valley total. Irrespective of the importance of pesticide emissions in San Joaquin, however, the primary purpose of the FIP measure is to reduce VOC emissions in Sacramento, Ventura and South Coast.

TECHNICAL BASIS -- Future Year Inventory Projections

10. EPA projected growth in pesticide emissions despite the fact that California is losing 100,000 acres of farmland every year and that low pesticide IPM activity is increasing.
11. The current emissions inventory should be based on actual VOC emissions rather than crop value.

The 1990 baseyear pesticide emission inventories used in the FIP proposal relied on draft information provided by DPR using the 1990 PUR. The promulgated FIP relies on inventories included in the November 1994 SIP submittal which use pesticide sales to estimate baseyear VOC emissions for the Sacramento and South Coast areas. Note that these estimates are actually lower than those based on PUR data. In all cases, the FIP relies on CARB's economic analysis to project the baseyear inventories to future year estimates needed for the attainment demonstrations. CARB has used information on crop value, land use, and other parameters to project changes in pesticide use. While CARB projects significant growth in structural pesticide use in the FIP areas, it projects little change in agricultural pesticide use.

12. EPA incorrectly projected growth in agricultural pesticide use. Growth is actually in structural application. Correct growth assumptions may justify removing the proposed agricultural pesticide control altogether.

As noted in response #11, the CARB analysis used in the FIP does not project substantial growth in agricultural pesticide use. Nonetheless, agricultural pesticide use is projected to continue contributing significant VOC emissions in the FIP areas, particularly in Sacramento and Ventura.

TECHNICAL BASIS -- OTHER

13. The proposal assumes that high-VOC pesticide formulations will be substituted on an one-for-one basis for low-VOC formulations. This may be incorrect because: (a) there may not be adequate replacements because many chemicals are not registered in California because of the State's stringent registration requirements; and (b) replacements may not be substituted one-for-one.

As described in the November 1994 SIP submittal, DPR has streamlined California's pesticide registration process to accelerate the availability of reduced risk pesticides and biologicals. In addition, restrictions on high-VOC pesticides under the FIP may create a market for low-VOC products and create incentives for pesticide manufacturers to develop and register such products in California. Finally, EPA expects some high-VOC pesticides to be replaced on a greater than one-for-one basis and others on a less than one-for-one basis. Lacking detailed projections on the

specific replacements likely to occur, EPA has used the simple one-for-one assumption for estimating costs and emission reductions of the measure.

14. The proposal states, "generally, however, EPA expects that low-VOC reformulations will provide feasible alternatives for many restricted pesticides." This issue is much to complex to be painted with such a broad brush.

EPA believes the generalization is reasonable in light of the many pest conditions for which there exist multiple pest control alternatives. In addition, EPA has revised the FIP measure to specifically address pheromones and emergency pest conditions where alternative low-VOC pest control options may not be viable. Nonetheless, there may well be some uses of high-VOC pesticides for which adequate alternatives are not available. Given the long lead time before pesticide use restrictions become effective, however, EPA believes many low-VOC alternatives will be developed.

15. Pesticide use profiles should be considered in light of the seasonality of NAAQS exceedences.

EPA has accounted for seasonal emission variations in the inventory and modeling components of the FIP. Note, however, that DPR's PUR data suggests that the highest pesticide use in California occurs during the summer, coinciding with the non-attainment areas' six to eight month ozone seasons.

16. Automobile emissions have been grossly underestimated, thus increasing the burden on pesticides.

The attainment demonstration in the promulgated FIP reflects newly updated inventories for on-highway mobile sources as well as most other source categories. Pesticides are still estimated to contribute a significant portion of total anthropogenic VOC emissions in the FIP areas (e.g., approximately 15% in Ventura) which must be reduced in order to achieve attainment equitably.

17. The FIP and SIP should consider the positive air quality benefit of ozone deposition on plants.
18. If the proposed measure forces conversion of agriculture land to urban use, there may be a net negative air quality impact.

EPA does not expect the FIP measure to result in reduced plant-life or agricultural land.

IMPACTS

19. Restricting pesticides will cripple farming in part or all of California.
20. The proposed measure will cause extensive crop damage and increase food prices.

21. The proposed measure would severely impact the availability of crop protection materials for agricultural production.

No evidence was provided to support these vague claims.

22. Termites may proliferate because no suitable insecticide is available.

Methyl bromide and Vicane are currently the highest use termiticides in California. Methyl bromide might be subject to restrictions under the FIP measure, although it is already being phased out of production and use under the stratospheric ozone program. Vicane, which is not an organic compound, has already effectively replaced many uses of Methyl bromide. In addition, there are other proven effective termite technologies that would not be restricted under the FIP rule including heat, cold, electrogun, sand barriers and borate.

23. The proposed measure would jeopardize availability of pheromones, important Integrated Pest Management tools (e.g., pheromone traps are critical to California's medfly program), and other high VOC but low usage pesticides.

EPA has added paragraph (c)(5)(i) to specifically exempt pheromones from the storage, distribution, and use restrictions of the FIP measure.

24. The proposed measure could jeopardize availability of spray oils essential for use of beneficial insects on citrus.

EPA has not attempted to evaluate the impact of this measure on each pesticide product and use. Note, however, that in subsequent conversations with EPA staff, the commenter indicated that these spray oils have low volatility and would probably not be affected by this measure.

25. Avoidable disease may be spread by pests and rodents which cannot be controlled with low-VOC pesticides.

26. Under the proposed measure, there is no mechanism for addressing epidemic or emergency pest infestations such as the medfly crisis and the whitefly infestation.

EPA has added paragraph (c)(5)(ii) to specifically exempt emergency conditions from the use restrictions of the FIP measure.

27. The proposal assumes that replacement products will substitute for restricted products. In fact, it is not known if substitute products which are safe and effective will be available. The pesticide measure should consider which alternative pest controls will be used if a particular pesticide product is restricted, and what the impacts of that alternative will be on the environment, human health, VOC emissions, etc.

Given the time and resource constraints of this rulemaking, EPA did not attempt to determine the likely replacements for each application of each high-VOC pesticide. Compliance with §52.2960, however, should not be achieved by violating FIFRA, OSHA, or other existing regulatory programs designed to protect worker safety, water quality, and other important concerns raised by this comment.

COSTS

28. Pesticide manufacturers may abandon California rather than attempt to reformulate their products to comply with regulations that affect only one State. This would increase costs to California farmers.

29. The proposed measure will put California farmers at a competitive disadvantage.

Agriculture is a huge industry in California. The California Department of Food and Agriculture commented that farmers in the State produce more than $19 billion annually and generate more than $70 billion in related economic activity (Document No. IV-D-484 in EPA Air Docket No. A-94-09). EPA believes the market for pesticides in California is sufficiently large to support pesticide reformulation efforts specifically directed toward California's needs. In addition, the Regulatory Impact Analysis for the FIPs suggest that the costs for this measure are generally consistent with costs born by other California industries without apparent competitive disadvantage.

30. EPA estimated the cost of VOC analysis at $200 per pesticide sample. Current costs are $500 to $1,200 per sample and very few good laboratories are available to perform the analysis.

For the FIP proposal, EPA estimated the cost of VOC analysis at $200 per sample, or $600 per product assuming triplicate analysis. Based on discussions with laboratories performing analysis for DPR's analogous data call-in, DPR's chemists report testing costs of approximately $500 per product[1]. EPA believes, therefore, that $600 per product is a reasonable estimate for this purpose.

31. EPA has not quantified the cost of crop losses to farmers or entire regions due to this regulation.

As discussed earlier, EPA expects that most high-VOC pesticides will be replaced with low-VOC alternative pest controls. If replacements are not available for specific pest control needs, the rule implementation schedule allows growers adequate time to plan appropriately and avoid crop loss.

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[1] Telephone conversation between Judy Pinot (DPR) and Andy Steckel (EPA), December 23, 1994.

32. EPA has not quantified the cost of this regulation on homeowners, tenants, or society due to structural damage.

EPA expects structural applicators will replace high-VOC pesticides with low-VOC products and avoid structural damage.

SCHEDULE

33. Pesticide restriction should not occur before the 1990-1993 PUR data is processed or June 30, 1995, whichever comes first.

Paragraph (c)(1)(i) requires submittal of pesticide VOC content data by May 15, 1997. EPA will then review the data and publish a pesticide VOC limit as described in paragraph (c)(2). Restrictions on pesticide distribution will not be implemented until one year later, and restrictions on use will not go into effect until two years later, probably in the year 2000.

34. The proposal does not allow reformulated products sufficient time for both the federal and state registration processes.

There are already low-VOC alternatives available for many pest control needs. Since use restrictions will not go into effect until 2000, pesticide manufacturers will have at least five years from rule promulgation to register those products that need to be reformulated. Where this reformulation reflects changes only in the inert product ingredients, this should be a straight-forward process. In addition, as described in the November 1994 SIP submittal, DPR has already streamlined California's pesticide registration process to accelerate the availability of reduced risk pesticides and biologicals.

35. There should be sufficient time for the SIP to replace the FIP before the FIP requirements go into effect.

There is adequate time for EPA to replace the FIP requirements with an equivalent SIP program. Note, however, that EPA needs at least several months to complete the administrative rulemaking requirements for amending federal regulations (e.g., proposed rulemaking, public comment period, etc.) under the Administrative Procedures Act.

ALTERNATIVES -- General

36. The California Department of Pesticide Regulation (DPR) is developing a more flexible State program to reduce VOC emissions from pesticides. EPA should replace the proposed FIP pesticide measure with DPR's program.

EPA strongly supports California's efforts to develop a State program and intends to be as flexible as possible in using it to replace the analogous FIP measure. Nonetheless, until the State adopts adequate regulations, EPA must maintain the FIP measure to assure emission reductions from pesticide application.

37. The FIP should include a mechanism to allow the State program to supersede the FIP measure.

EPA will continue to encourage and support rule development and adoption by the State in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation. EPA has sufficient authority to remove the FIP measure upon approval of an adequate SIP measure, and it is not necessary or appropriate to include a replacement mechanism in the FIP regulation itself.

38. Natural market forces and changes in application and use practices may provide the desired emission reductions without the need for regulatory measures.

39. Like the SIP, the FIP should promote voluntary reduction measures and an education program.

EPA is required to promulgate regulations which assure the emission reductions necessary to achieve attainment in specific areas by specific dates. Voluntary programs do not provide adequate assurance that these reductions will occur.

40. Production agriculture is a biologically based process not appropriate for arbitrary emission limits traditionally mandated for other stationary source emissions such as coatings.

No evidence was submitted demonstrating that VOC limits are inappropriate for biologically-based processes. The chemical industry currently develops pesticides within FIFRA's constraints regarding worker safety, consumer protection and environmental hazards, and EPA believes that constraints on VOC content are also reasonable.

41. The FIP should require control of specific pesticides where substitutes are known to exist.

Given the time and resource constraints of this rulemaking, EPA did not attempt to identify specific high-VOC pesticides and evaluate possible replacements.

42. The pesticide measure should allot pesticide manufacturers a VOC emissions cap for the affected area, and require manufacturers to reduce the cap by 45%.

As discussed in the FIP proposal, EPA did consider an emissions cap program and other approaches for controlling VOCs from pesticides. In pre-proposal meetings, however, industry and other affected parties expressed a strong preference for a VOC-

limit approach. Industry expressed concern, among other things, about equity and fairness under a cap program. In addition, the enforcement demands of such a program would be prohibitively resource-intensive for EPA.

43. EPA should not use implementation and enforcement simplicity as the primary criteria for designing a regulatory program.

It is inappropriate for EPA to promulgate regulations which it cannot implement for lack of information or resources. Section 110(a)(2)(E) of the Clean Air Act, in fact, requires that SIPs (and, by extension, FIPs) contain, "adequate personnel, funding, and authority...to carry out (the regulations)." Thus, while EPA's resource limitations are certainly not the only factors used in developing the FIP, they must be considered.

44. The pesticide measure should focus on reducing VOC emissions from pesticides, and should not be used as a forum for reducing overall pesticide use.

EPA agrees. The sole purpose and intent of the FIP pesticide measure is to reduce VOC emissions.

ALTERNATIVES -- Applicability

45. The SIP is statewide, and therefore more equitable and effective than the FIP.

During various pre-proposal meetings, agriculture and pesticide industry representatives expressed a strong desire that the SIP and FIP regulations be implemented equally across California. Partly as a result of these discussions, both DPR's draft SIP measure and EPA's proposed FIP measure were designed for statewide implementation. In addition to providing greater equity, statewide implementation is easier to enforce and more likely to provide necessary emission reductions both in the FIP areas and in other nonattainment areas in the State. While EPA has finalized the FIP measure on a statewide basis, California's SIP submittal of November 1994 planned for SIP implementation only in those areas where a local plan claims pesticide VOC reductions.

46. High-VOC pesticides should be restricted on a county-by-county basis at the discretion of the local Agricultural Commissioner.

For reasons discussed in item #45 and in the preamble to the FIP notice, EPA has promulgated the FIP pesticide measure on a statewide basis. California may, of course, adopt SIP regulations that vary county to county.

47. Agricultural and structural pesticides are unfairly regulated compared to consumer pesticides, which are not subject to either the proposed pesticide measure or the proposed consumer products measure.

48. Regulation should focus on consumer and structural pesticide uses which are increasing, rather than agricultural use which is decreasing.

California currently regulates consumer pesticides under the State's consumer products program which is projected to reduce overall emissions by 82% off a 1990 baseline. In contrast, the FIP pesticide measure subjects structural and agricultural pesticide products to 30% control.

49. Wood preservatives have historically been regulated as architectural coatings. EPA should modify the definition of structural pesticides to exempt those products already subject to technology-specific limits under SIP and FIP architectural coating rules.

EPA concurs and has modified the FIP measure.

ALTERNATIVES -- Required Submission of Data (Test Methods)

50. The FIP should use test methods developed by DPR for determining the VOC content of pesticides. For liquid products, these are described by DPR in "data call-in" letters of 4/29/94 and 6/9/94 which require VOC analysis. DPR's test methods for other formulations should be completed by the end of 1994. It would be ineffective, disruptive and protractive to require other test methods.

EPA added paragraph (g) and modified paragraph (c)(1) to allow use of DPR's data for purposes of determining the VOC content limit. EPA is concerned, however, with the accuracy of DPR's test methods for purposes of determining compliance for individual pesticides, particularly in light of the methods' treatment of water and reliance on a single (rather than triplicate) analytic run. Therefore, these test methods are not specifically promulgated by EPA under paragraph (f) or referenced in paragraph (c)(4). EPA could, in the future, determine them to be equivalent pursuant to paragraph (f)(1).

51. The methods used to analyze VOC content of pesticides should be peer reviewed.

The test methods promulgated in paragraph (f) underwent an extensive peer review process during development of the, "Alternative Control Technology Document; Control of VOC Emissions from the Application of Agricultural Pesticides" (EPA-453/R-92-011, March 1993).

52. VOC analysis should be conducted on products as they are sold and not as diluted at the time of application. This will assure more standardized data.

If, for example, a pesticide product label recommends one-to-one dilution in the field with xylene, VOC analysis of the product as sold would significantly underpredict actual emissions. At this time, EPA does not have evidence to suggest that dramatic field dilution is occurring.

ALTERNATIVES -- Establish VOC Limit

53. 20% emission reductions is more than adequate to achieve agriculture's fair share.

Federal, state, and local agencies have required dramatic emission reductions from almost all significant VOC and NOx sources to reduce the high ozone concentrations in California. Since the 1960s, for example, automobile and power-plant emissions have been reduced over 90%. In light of the large reduction requirements that are needed for attainment and that have been placed on other sources, 20% emission reductions from pesticides, which have never been regulated for VOC emissions, seems inequitably low. California selected a 20% maximum reduction requirement in the 1994 SIP, and believes this may be attainable through voluntary measures. After balancing the comments, equity concerns and other considerations, EPA has selected a 30% VOC reduction requirement for pesticides.

54. It is not clear whether the proposed reductions are technical feasible. The regulatory program should be an ongoing process that does not preempt success with restrictively high reductions.

55. DPR's 8/25/94 draft SIP requires quantification of VOC emissions from pesticide application at three milestone years: 1996, 1999, 2005. This may show that emissions are decreasing for other reasons, and allow DPR to better target emission reductions.

No evidence was presented by commenters that suggests the FIP reduction targets are unreasonably high. DPR, in fact, believes that 20% reductions may be achieved voluntarily. DPR's proposal to periodically modify the SIP reduction requirements may, in principal, provide for regulations more closely tailored to California's specific needs. EPA has not pursued such a strategy, however, because of the large resource demands it places on the agency and because of the uncertainty it introduces to the attainment demonstration and to the affected industry.

56. The proposed measure should regulate pesticides based on actual emissions instead of VOC content.

EPA continues to believe that a VOC-content approach will, in the long term, reduce emissions more reliably and fairly than an emissions-based strategy. Most significantly, EPA wishes to avoid replacing a high-use low-VOC pesticide ("product A") with a previously low-use but high-VOC product ("product B"). If the products were interchanged on a one-to-one basis, product B would become high-use and result

in a net emissions increase. Under the draft SIP measure, California would reevaluate the allowable pesticides every year, and force users from now high-use and high-emissions Product B back to now low-use and low-emissions product A, ultimately resulting in disruption of both pesticide use and manufacturing industries without any emission reductions. The main disadvantage of the proposed FIP VOC-content approach noted by commenters is the possibility of restricting pheromone availability. This has been addressed, however, by exempting pheromones from the substantive requirements of the FIP measure.

ALTERNATIVES -- Restrictions on Pesticides

57. The pesticide measure should have a specific exemption for pheromones.

See item #23.

58. The pesticide measure should not restrict products needed to control an emergency situation.

See item #26.

59. The proposed measure should not restrict pesticide application in the winter which will completely volatilize before the summer ozone season.

Seasonal control would require enforcement at the user rather than the distributor level which is extremely resource intensive for the regulatory agencies. In addition, because of the long ozone seasons in California, it is unclear that this strategy would provide much relief to industry. The State, however, may elect to pursue seasonal controls in the SIP.

60. Soil-incorporated pesticides emit less than those that are aerially applied. Pesticide application method should be factored into the regulatory program.

California has suggested that it hopes to address application method in developing emission calculation procedures for the SIP, and EPA would certainly support such an effort. At this time, however, there is no reasonable technical basis for incorporating application method into the FIP.

61. EPA should consider factors besides air quality in finalizing the FIP. These should include pesticide efficacy, the availability of substitutes, time and method of application, worker safety, consumer protection, and other environmental impacts such as water and soil quality, wildlife impacts, and impacts on IPM practices. The pesticide measure should not favor one pesticide alternative over another based solely on VOC emissions without consideration of these other parameters.

The sole purpose of this FIP measure is to reduce VOC emissions from pesticide application. It is not appropriate, therefore, for the FIP to include provisions that would affect ongoing programs to protect worker safety, consumer production, and the other laudable goals included in this comment. Instead, EPA believes that affected industry can and should comply with the FIP provisions within the existing framework of FIFRA, OSHA, and other ongoing programs. California, however, has expressed interest in formulating a more integrated strategy, and EPA would support such an effort as part of the SIP.

62. The restriction on distribution of high-VOC pesticides should be specifically revised to read, "restrictions will be based on availability, safety, and efficacy of alternative products, including their impact on IPM practices or other pest management systems."

This recommendation would require extensive agency evaluation of thousands of pesticide products and their potential replacements which is beyond the scope or intent of this regulation.

63. EPA should replace the word "prohibited" with the word "restricted" in paragraph (c)(3).

No justification or rationale was given for this comment, and EPA believes it would add unnecessary ambiguity.

ALTERNATIVES -- Revisions to the VOC limit

64. The pesticide measure should require that EPA revise the VOC limit annually based on DPR's pesticide use reports, changes in crop production practices, availability of new and reformulated products, existence of new pests and other factors.

EPA could, in theory, reevaluate and revise the VOC limit each year as provided in paragraph (c)(4)(iii). EPA does not, at this time, anticipate such frequent revisions because each is resource-intensive and will result in some confusion and disruption of pesticide producers, distributors and users.

ALTERNATIVES -- Reporting

65. All recordkeeping should follow DPR's existing PUR procedures.
66. The FIP should rely on the existing PUR system rather than require duplicative reporting to EPA.

Paragraph (d)(3) specifically requires pesticide applicators to submit a copy of the PUR to EPA, so there is no inconsistency with DPR requirements in this regard. It would result in duplicative reporting, but EPA has evaluated the cost of this reporting

in the Information Collection Request (ICR) analysis associated with this rulemaking, and does not believe it presents an unreasonable burden. In addition, EPA will continue supporting DPR's efforts to develop a SIP measure that can replace the FIP before the FIP requirements are scheduled for implementation.

67. Distributors should not be required to report to EPA, as California's existing PUR system will provide more accurate data for monitoring and assessing VOC emissions.

EPA has promulgated reporting requirements for distributors in paragraph (d)(2) to both assure compliance with the distribution restrictions in paragraph (c)(3)(i) and to monitor compliance with the storage and use restrictions in paragraph (c)(3)(ii). This information is not available through California's existing PUR system.

68. The proposed recordkeeping requirements combined with existing Federal Worker Safety Standards and existing DPR requirements would be insurmountable.

69. EPA should provide federal funds for any use of the PUR system required by the FIP.

The ICR associated with this rulemaking projects that the pesticide recordkeeping requirements do not present an unreasonable burden on affected industry. No evidence was presented to refute these calculations.